

11/11/2016

08/01/2018

Engineer: Al-Haddad

PV(kg/yr):

Revision Notes/Assessment Overview: Pre FOCUS Rev. 1 (7/23/2018): The submitter clarified that, "The use of the PMN substance is not intended for industrial, commercial or consumer spraying operations." Therefore, the IRER has been revised so that there are no releases or exposures associated with spray coating.

Submitter: Allnex USA Inc.

Use: Waterborne UV curable resin/binder in inks or overprint varnishes used in inkjet, gravure coating, and flexo-coating processes on a variety of substrates including plastics and paper. Acrylate FGEW = [REDACTED]

Other Uses: No other uses were found for the PMN material.

MSDS: Y

Label: N

Gen Eqpt: Engineering controls are not usually necessary if good hygiene practices are followed. Wear eye/face protection. Avoid skin contact. Wear impermeable gloves. Nitrile rubber (NBR), thickness: > 0.56 mm, break through time: up to 480 min

Respirator: For operations where inhalation exposure can occur use an approved respirator. Recommendations are listed below. Other protective respiratory equipment may be used based on user's own risk assessment. Recommended respirators include those certified by NIOSH. For operations where inhalation exposure can occur use an approved respirator. Recommendations are listed below. Other protective respiratory equipment may be used based on user's own risk assessment. Recommended respirators include those certified by NIOSH.

Health Effects: The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract. Contact with skin may cause a cross-allergic reaction in persons already sensitized to acrylates.

TLV/PEL: - None established

LVE PPE:

CRSS: 07/09/2018

Chemical Name: [REDACTED]

S-H₂O: Dispersible

VP: 0.000001

MW: 2470

Physical State and Misc CRSS Info:

NEAT: Solid (est.)

Mfg: NK: Imported

Proc/FormL: Dispersion, [REDACTED] PMN material diluted to [REDACTED] in waterborne formulation

End Use: Destroyed. Submitted data: NAVG MW = 2470 by GPC with 2.3% less than 500 and 9.6% less than 1000 (chromatogram not provided). The submitted MSDS and physico-chemical properties are for PMN material in aqueous dispersion (pH 6-8.5). An IR spectrum was not provided. Estimated data: high boiling point and negligible vapor pressure (high molecular weight polymer); dispersible in water [REDACTED]

[REDACTED]. The molecular weight for the structure as drawn with all repeating units equal to [REDACTED]

Consumer Use: N

SAT (concerns):

Related Cases and Misc SAT info:

Related Cases:

Migration to ground water: Negligible

PBT Rating: 0P 0B 0T

Health:

Eco: 1, No releases to water

Occupational Exposure Rating: [REDACTED]

Notes & Key Assumptions: Occupational exposure and environmental releases were estimated using the 9/30/2013 version of ChemSTEER tool. Input to ChemSTEER tool includes information from: the PMN submission, physical / chemical properties, relevant past cases, and the October 2011 ESD for the Application of UVEB Curable Coatings. The submission is import only; therefore MFG was not assessed in this IRER. // The following same submitter, similar use past cases were referenced for consistency: [REDACTED] // PROC:

This IRER assesses releases from drum and equipment cleaning to uncertain media (consistent with all past cases). This IRER assesses dermal exposures from container loading [REDACTED]. // USE: This IRER assesses releases from drum cleaning and equipment cleaning, to water, incineration, air and landfill [REDACTED]

Pollution prevention Considerations: No Pollution Prevention information was provided by the submitter.

P2REC: No Pollution Prevention information was provided by the submitter.

Exposure Based Review: [REDACTED]

- 1) # of workers exposed: [REDACTED] >1000 [REDACTED]
- 2) >100 workers with >10 mg/day inhalation exposure: [REDACTED]
- 3)(a) >100 workers with/1-10 mg/day inh. exp. & >100 days/yr: [REDACTED]
- 3)(b) Routing Dermal Cont: >250 workers & >100 days/yr: [REDACTED]

Scenario Details:

Name: PROC: Formulation of Coating

Number of Sites: 8

Locations:

unknown site(s)

Basis: Submission estimates 8 sites, [REDACTED] exposure days/yr, and [REDACTED] PMN in the raw material [REDACTED]. RAD assumes [REDACTED]. CS calculates [REDACTED].

Process Description: PMN [REDACTED]

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

Release Notes: IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Media: Water or Incineration or Landfill

Descriptor A: High End

Quantity A: [REDACTED]/site-day over

Frequency A: [REDACTED] from 8 sites or [REDACTED]

To: uncertain

From: Cleaning Liquid Residuals from Drums Used to Transport the Raw Material

Basis: EPA/OPPT Drum Residual Model, CEB standard 3% residual. The submission indicates that releases are not expected from drum cleaning. RAD assesses this release using the standard model to uncertain media as conservative.

Media: Water or Incineration or Landfill

Descriptor A: High End

Quantity A: [REDACTED] site-day over

Frequency A: [REDACTED] from 8 sites or [REDACTED]

To: uncertain

From: Equipment Cleaning Losses of Liquids from a Single, Large Vessel

Basis: EPA/OPPT Single Vessel Residual Model, CEB 0.02% residual. The submission indicates that releases from equipment cleaning are not expected. RAD assesses this release using the standard model to uncertain media as conservative.

Release Total: [REDACTED]

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Media: Dermal

Exposure To: Liquid

Descriptor A: High End

Quantity A: [REDACTED]

Frequency A: [REDACTED]

Basis: Unloading Liquid Raw Material from Drums EPA/OPPT 2-Hand Dermal Contact with Liquids Model. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.

Number of workers (all sites) with Dermal Exposure: [REDACTED]

INHALATION MONITORING DATA REVIEW

1)Uncertainty (estimate based on model,regulatory limit, or data not specific to industry.):

[REDACTED]

2)(a)Exposure level > 1mg/day?: [REDACTED]

2)(b)Hazard Rating for health of 2 or greater?: [REDACTED]

Inhalation monitoring data desired?: No

Media: Dermal

Exposure To: Liquid

Descriptor A: High End

Quantity A: [REDACTED]

Frequency A: [REDACTED]

Basis: Loading Liquid Product into Containers EPA/OPPT 2-Hand Dermal Contact with Liquids Model. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.

Number of workers (all sites) with Dermal Exposure: [REDACTED]

INHALATION MONITORING DATA REVIEW

1)Uncertainty (estimate based on model,regulatory limit, or data not specific to industry.):

█

2)(a)Exposure level > 1mg/day?: █

2)(b)Hazard Rating for health of 2 or greater?: █

Inhalation monitoring data desired?: No

Name: USE: Coating Application

Number of Sites: 8

Locations:

unknown site(s)

Basis: The submission estimates 8 sites. The October 2011 ESD on the Application of Radiation Curable Coatings, Inks, and Adhesives provides default values of 250 operating days/year. EPA assumes 8 site, 250 days/yr. CS calculates █.

Process Description: Coating █ is █

█

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

Release Notes: IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Media: Incineration or Landfill

Descriptor A: Conservative

Quantity A: █

Frequency A: █ from 8 sites or █

To: Incineration or Landfill (per ESD)

From: Equipment Cleaning Losses of Liquids from Multiple Vessels

Basis: EPA/OPPT Multiple Process Vessel Residual Model, CEB standard 2% residual. The submission did not provide release estimates for the use of the coating. Per ESD, approximately one percent of used radiation curable product is lost during equipment cleaning at the application site with releases typically sent to incineration or land. EPA recommends using the EPA/OPPT Multiple Process Vessel Residual Model to conservatively estimate process losses from equipment cleaning if additional site specific information is not available.

Media: Water or Incineration or Landfill

Descriptor A: High End

Quantity A: █

Frequency A: █ from 8 sites or █

To: Water, incineration, or landfill (Per ESD)

From: Cleaning Liquid Residuals from Containers Used to Transport the Raw Material

Basis: EPA/OPPT Drum Residual Model, CEB standard 3% residual. The submission did not provide release estimates for the use of the coating. Container cleaning may involve an organic and water wash, which could be released to water, incineration, or landfill, per ESD.

Release Total: [REDACTED]

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Media: Dermal

Exposure To: Liquid

Descriptor A: High End

Quantity A: [REDACTED]

Frequency A: [REDACTED]

Basis: Unloading Liquid Raw Material from Containers EPA/OPPT 2-Hand Dermal Contact with Liquids Model. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.

Number of workers (all sites) with Dermal Exposure: [REDACTED]

INHALATION MONITORING DATA REVIEW

1)Uncertainty (estimate based on model,regulatory limit, or data not specific to industry.):

[REDACTED]

2)(a)Exposure level > 1mg/day?: [REDACTED]

2)(b)Hazard Rating for health of 2 or greater?: [REDACTED]

Inhalation monitoring data desired?: No